

Cystogastrocolic fold and associated atrophy of the gallbladder

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ABSTRACT

Peritoneal anomalies are common in humans. We report the presence of a cystogastrocolic fold associated with an abnormally small gallbladder in a 50-year-old male cadaver. Presence of this fold is one of the clinically important anomalies, which can result in atrophy of the gallbladder or congenital obstruction of the duodenum.

KEY WORDS

cystogastrocolic fold, gallbladder atrophy, peritoneal anomaly, peritoneum

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INTRODUCTION

The peritoneum is the largest and most complexly-arranged serous membrane in the body. The potential peritoneal spaces, the peritoneal reflections forming peritoneal ligaments, mesenteries, omenta and the natural flow of peritoneal fluid determine the route of spread of intraperitoneal fluid and consequently, disease processes within the abdominal cavity. The peritoneal ligaments, mesenteries and omenta also serve as boundaries for disease processes and conduits for disease spread. The process of formation of the peritoneal folds around the stomach, duodenum and liver is a complicated process.

CASE REPORT

During the routine dissection classes for the medical undergraduates in the Department of Anatomy at Melaka Manipal Medical College, Manipal, a 50-year-old male cadaver was found to have an abnormal peritoneal fold (Fig. 1). It extended from the pyloro-duodenal junction and the right colic flexure to the liver (cystogastrocolic fold). On the liver, it was attached to the inferior border and inferior surface of the right lobe of the liver. The gallbladder was very small (Fig. 2) and was completely covered (buried) in the cystogastrocolic fold (Fig. 1). The course and relations of the common bile duct were normal. The quadrate lobe of the liver was small and was almost separated from the liver except at its posterior end.

DISCUSSION

During the embryonic life, the stomach is first seen

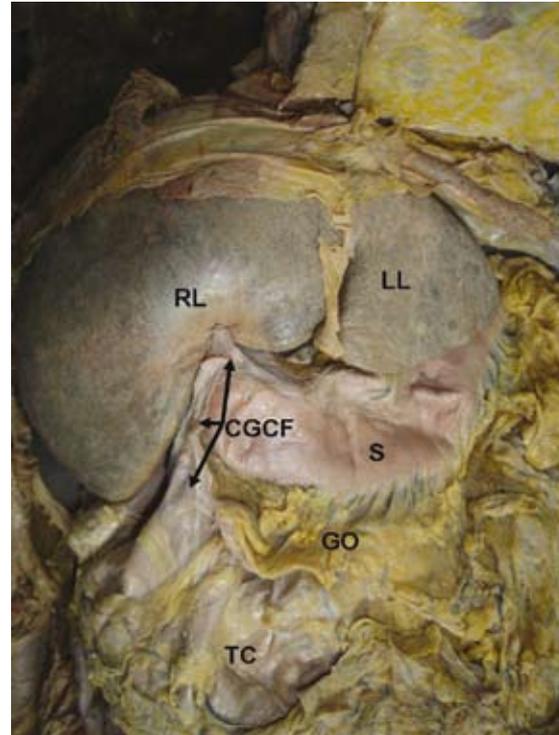


Fig. 1 Photograph taken during dissection of the abdomen shows the liver and cystogastrocolic fold.

RL: right lobe of the liver; LL: left lobe of the liver; CGCF: cystogastrocolic fold; S: stomach; GO: greater omentum; TC: transverse colon

as a fusiform dilatation of the foregut just distal to the oesophagus. Its dorsal border is attached to the posterior abdominal wall by a fold of peritoneum called dorsal mesogastrum, and its ventral border is attached to the anterior abdominal wall by the ventral mesogastrum. The ventral mesentery exists only in the region of the terminal part of the oesophagus, the stomach, and upper part of the duodenum, and is derived from the septum transversum. Growth of the liver into the mesenchyme of the septum transversum divides the ventral mesentery into (a) the lesser omentum, extending from the lower portion of the oesophagus, the stomach, and the upper portion of the duodenum to the liver, and (b) the falciform ligament, extending from the liver to the ventral body wall.⁽¹⁾ The rest of the ventral mesentery disappears. The cystogastrocolic fold reported here is probably due to non-disappearance of rest of the ventral mesentery.

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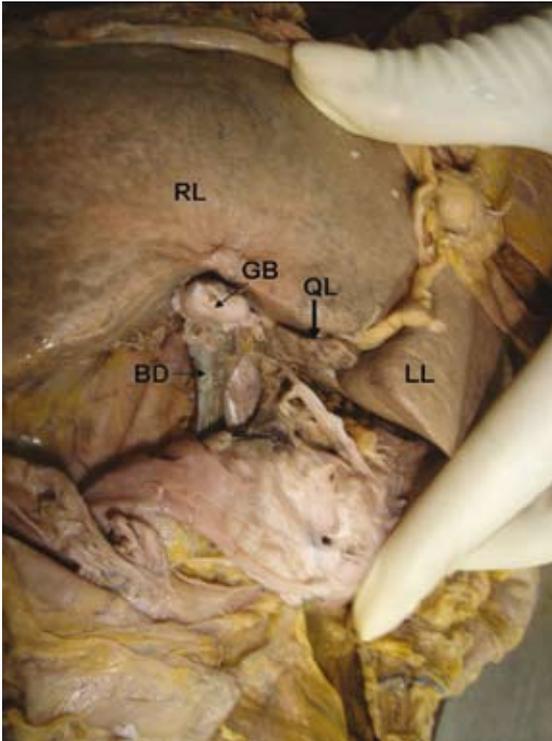


Fig. 2 Photograph taken during dissection of the abdomen shows the liver, gallbladder and bile duct. RL: right lobe of the liver; LL: left lobe of the liver; QL: quadrate lobe; GB: gallbladder; BD: bile duct

A similar fold as observed by us has been previously reported; it caused a constriction on the duodenal wall, notable radiologically.⁽²⁾ Knowledge of this type of anomalous fold is useful in differentiating pathological constrictions due to ulcerations from anatomical constrictions due to peritoneal folds. A case of proximal jejunal obstruction by a congenital band has been reported.⁽³⁾ The band these authors observed ran from the antimesenteric wall of the proximal jejunum just distal of the Treitz's ligament to the root of the mesentery. The attachment of the greater omentum with the falciform ligament of the liver was found in a cadaveric dissection.⁽⁴⁾ This attachment had blood vessels in it.

Anomalous folds of the peritoneum have been reported in the past but no reports are available on the folds connecting the gallbladder, stomach and the right colic flexure. The gallbladder shows frequent

variations; accessory or double gallbladders have been reported.⁽⁵⁻⁷⁾ A case of triple gallbladders has also been reported.⁽⁸⁾ Floating gallbladders with mesenteries have been reported. In a study of 27 patients, there were 13 lumbar, nine pelvic and five iliac gallbladders, with poor function in 20 of them.⁽⁹⁾ The floating gallbladders are prone to volvulus. Two cases of volvulus of the gallbladder have been reported.⁽¹⁰⁾ There are reports of the presence of a gallbladder embedded in the internal oblique muscle of the abdomen.⁽¹¹⁾ The case presented here seems to be clinically important. The degeneration of the gallbladder in our case could be because of its position in the cystogastrocolic fold of the peritoneum. The fold was probably congenital and short, and it would not have allowed the gallbladder to grow in size. The knowledge of this type of peritoneal fold is important for surgeons performing gastrectomy, liver transplant surgery and cholecystectomy.

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